

FIGURE 1

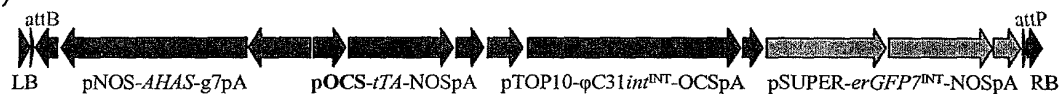
A) pBPS EW051 T-DNA



B) pBPS EW151 T-DNA



C) Monocot T-DNA



D) T-DNA Foot Print



1 kb

09504500 09504500

FIGURE 2

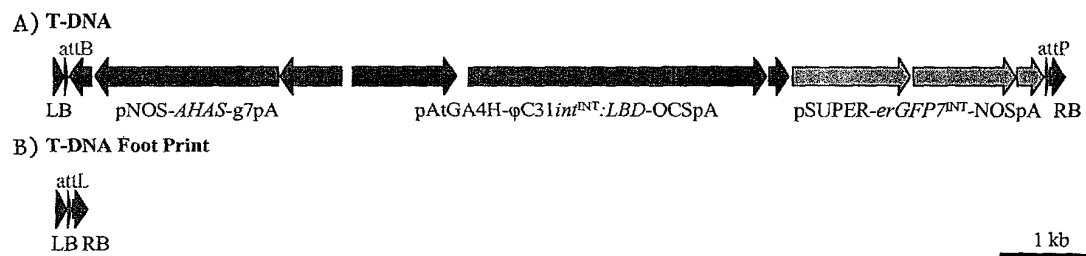
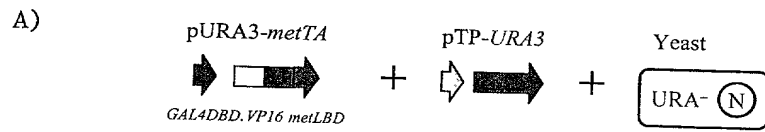


FIGURE 3



B)

<i>metLBD</i> Activity	Minimal Medium Supplements	
	no JHA	JHA
wild type	URA ⁻ (N)	URA ⁺ (N)
reverse mutant	URA ⁺ (N)	URA ⁻ (N)

○ = metTA Localization

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FIGURE 4

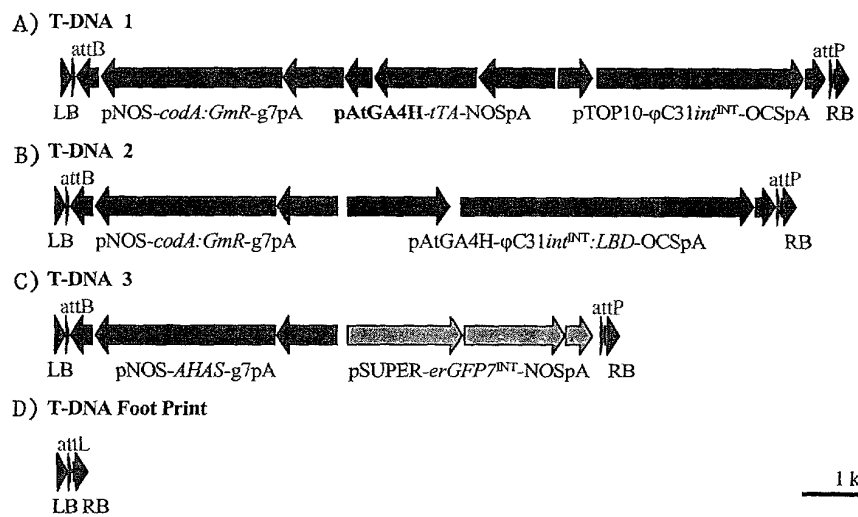
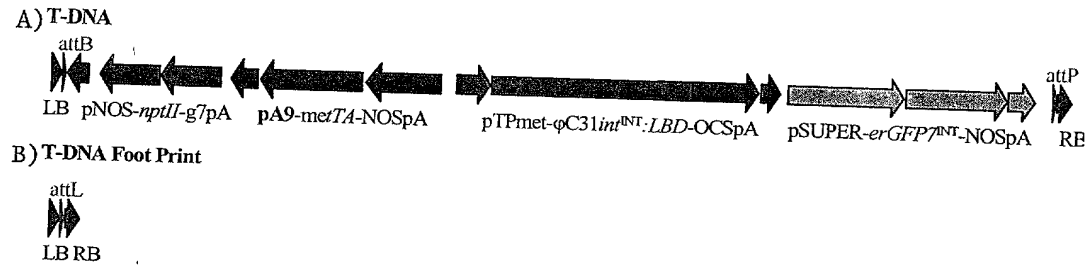


FIGURE 5



0940550 002701

FIGURE 6

Nucleotide sequence of ϕ C31^{INT}

1 ATGGCAACAAG GGGTTGTGAC CGGGGTGGAT ACGTAAGTTT CTGCTTCTAC CTTTGATATA
 61 TATATAATAA TTATCATTAA TTAGTAGTAA TATAATATTT CAAATATTTT TTTCAAAATA
 121 AAAGAATGTA GTATATAGCA ATTGCTTTTC TGAGTTTAT AAGTGTGTAT ATTTTAATTT
 181 ATAACTTTTT TAATATATGA CAAAATTTG TTGATGTGCA GGTACGCGGG TGCTTACGAC
 241 CGTCAGTCGC GCGAGCGCGA GAATTCGAGC GCAGCAAGCC CAGCGACACA GCGTAGCGCC
 301 AACGAAGACA AGGCGGCCGA CCTTCAGCGC GAAGTCGAGC GCGACGGGGG CCGGTTTCAGG
 361 TTCGTCGGGC ATTCAGCGA AGCGCCGGGC ACGTCGGCGT TCGGGACGGC GGAGCGCCCCG
 421 GAGTTCGAAC GCATCCTGAA CGAATGCCGC GCCGGGCGGC TCAACATGAT CATTGTCTAT
 481 GACGTGTCGC GCTTCTCGCG CCGAAGGTC ATGGACGCGA TTCCGATTGT CTCGGAATTG
 541 CTCGCCCTGG GCGTGACGAT TGTTTCCACT CAGGAAGGCG TCTTCCGGCA GGGAAACGTC
 601 ATGGACCTGA TTCACCTGAT TATGCGGCTC GACGCGTCGC ACAAAGAATC TTCGCTGAAG
 661 TCGGCGAAGA TTCTCGACAC GAAGAACCTT CAGCGCGAAT TGGGCGGGTA CGTCGGCGGG
 721 AAGGCGCCTT ACGGCTTCGA GCTTGTTTCG GAGACGAAGG AGATCACGCG CAACGGCCGA
 781 ATGGTCAATG TCGTCATCAA CAAGCTTGCG CACTCGACCA CTCCCCTTAC CGGACCCTTC
 841 GAGTTCGAGC CCGACGTAAT CCGGTGGTGG TGGCGTGAGA TCAAGACGCA CAAACACCTT
 901 CCCTTCAAGC CGGGCAGTCA AGCCGCCATT CACCCGGGCA GCATCACGGG GCTTTGTAAG
 961 CGCATGGACG CTGACGCCGT GCCGACCCGG GCGGAGACGA TTGGGAAGAA GACCGCTTCA
 1021 AGCGCCTGGG ACCCGGCAAC CGTTATGCGA ATCCTTCGGG ACCCGCGTAT TCGGGGCTTC
 1081 GCCGCTGAGG TGATCTACAA GAAGAAGCCG GACGGCACGC CGACCACGAA GATTGAGGGT
 1141 TACCGCATTC AGCGCGACCC GATCACGCTC CGGCCGGTCG AGCTTGATTG CGGACCGATC
 1201 ATCGAGCCCG CTGAGTGGTA TGAGCTTACG GCGTGGTTGG ACGGCAGGGG GCGCGGCAAG
 1261 GGGCTTTCCC GGGGGCAAGC CATTCTGTCC GCCATGGACA AGCTGTACTG CGAGTGTGGC
 1321 GCCGTCAATG CTTCGAAGCG CGGGGAAGAA TCGATCAAGG ACTCTTACCG CTGCCGTCGC
 1381 CGGAAGGTGG TCGACCCGTC CGCACCTGGG CAGCACGAAG GCACGTGCAA CGTCAGCATG
 1441 GCGGCACTCG ACAAGTTCGT TGCGGAACGC ATCTTCAACA AGATCAGGCA CGCCGAAGGC
 1501 GACGAAGAGA CGTTGGCGCT TCTGTGGGAA GCCGCCGAC GCTTCGGCAA GCTCACTGAG
 1561 GCGCCTGAGA AGAGCGGCGA ACGGGCGAAC CTTGTTGCGG AGCGCGCCGA CGCCCTGAAC
 1621 GCCCTTGAAG AGCTGTACGA AGACCGCGCG GCAGGCGCGT ACGACGGACC CGTTGGCAGG
 1681 AAGCACTTCC GGAAGCAACA GGCAGCGCTG ACGCTCCGGC AGCAAGGGGC GGAAGAGCGG
 1741 CTTGCCGAAC TTGAAGCCGC CGAAGCCCCG AAGCTTCCCC TTGACCAATG GTTCCCCGAA
 1801 GACGCCGACG CTGACCCGAC CGGCCCTAAG TCGTGGTGGG GGCGCGCGTC AGTAGACGAC
 1861 AAGCGCGTGT TCGTCGGGCT CTTCGTAGAC AAGATCGTTG TCACGAAGTC GACTACGGGC
 1921 AGGGGGCAGG GAACGCCCAT CGAGAAGCGC GCTTCGATCA CGTGGGCGAA GCCGCCGACC
 1981 GACGACGACG AAGACGACGC CCAGGACGGC ACGGAAGACG TAGCGGCGTA G

FIGURE 7

Nucleotide sequence of ϕ C31_{int}*^{INT}

1 ATGGCACAAG GGGTTGTGAC CGGGGTGGAT ACGTAAGTTT CTGCTTCTAC CTTTGATATA
 61 TATATAATAA TTATCATTAA TTAGTAGTAA TATAATATTT CAAATATTTT TTTCAAAATA
 121 AAAGAATGTA GTATATAGCA ATTGCTTTTC TGTAGTTTAT AAGTGTGTAT ATTTTAATTT
 181 ATAACTTTTT TAATATATGA CAAAAATTTG TTGATGTGCA GGTACGCGGG TGCTTACGAC
 241 CGTCAGTCGC GCGAGCGCGA GAATAGCAGT GCAGCAAGCC CAGCGACACA GCGTAGCGCC
 301 AACGAAGACA AGGCGGCCGA CCTTCAGCGC GAAGTCGAGC GCGACGGGGG CCGGTTTCAGG
 361 TTCGTGCGGC ATTTACGCGA AGCGCCGGGC ACGTCGGCGT TCGGGACGGC GGAGCGCCCG
 421 GAGTTCGAAC GCATCCTGAA CGAATGCCGC GCCGGGCGGC TCAACATGAT CATGTCTAT
 481 GACGTGTCGC GCTTCTCGCG CCTGAAGGTC ATGGACGCGA TTCCGATTGT CTCGGAATTG
 541 CTCGCCCTGG GCGTGACGAT TGTTTCCACT CAGGAAGGCG TCTTCCGGCA GGGAAACGTC
 601 ATGGACCTGA TTCACCTGAT TATGCGGCTC GACGCGTCGC ACAAAGAATC TTCGCTGAAG
 661 TCGGCGAAGA TTCTCGACAC GAAGAACCTT CAGCGCGAAT TGGGCGGGTA CGTCGGCGGG
 721 AAGGCGCCTT ACGGCTTCGA GCTTGTTCG GAGACGAAGG AGATCACGCG CAACGGCCGA
 781 ATGGTCAATG TCGTCATCAA CAAGTTAGCG CACTCGACCA CTCCCCTTAC CGGACCCTTC
 841 GAGTTCGAGC CCGACGTAAT CCGGTGGTGG TGGCGTGAGA TCAAGACGCA CAAACACCTT
 901 CCCTTCAAGC CGGGCAGTCA AGCCGCCATT CACCCGGGCA GCATCACGGG GCTTTGTAAG
 961 CGCATGGACG CTGACGCCGT GCCGACCCGG GGCGAGACGA TTGGAAGAA GACCGCTTCA
 1021 AGCGCCTGGG ACCCGGCAAC CGTTATGCGA ATCCTTCGGG ACCGCGTAT TCGGGGCTTC
 1081 GCCGCTGAGG TGATCTACAA GAAGAAGCCG GACGGCACGC CGACCACGAA GATTGAGGGT
 1141 TACCGCATTC AGCGCGACCC GATCACGCTC CGGCCGGTCG AGCTTGATTG CGGACCGATC
 1201 ATCGAGCCCC CTGAGTGGTA TGAGCTTCAG GCGTGGTTGG ACGGCAGGGG GCGCGGCAAG
 1261 GGGCTTTCCC GGGGGCAAGC CATTCTGTCC GCCATGGACA AGCTGTACTG CGAGTGTGGC
 1321 GCCGTCATGA CTTCGAAGCG CGGGGAAGAA TCGATCAAGG ACTCTTACCG CTGCCGTGCG
 1381 CGGAAGGTGG TCGACCCGTC CGCACCTGGG CAGCACGAAG GCACGTGCAA CGTCAGCATG
 1441 GCGGCACTCG ACAAGTTCGT TGCAGAACGC ATCTTCAACA AGATCAGGCA CGCCGAAGGC
 1501 GACGAAGAGA CGTTGGCGCT TCTGTGGGAA GCCGCCCGAC GCTTCGGCAA GCTCACTGAG
 1561 GCGCCTGAGA AGAGCGGCGA ACGGGCGAAC CTTGTTGCGG AGCGCGCCGA CGCCCTGAAC
 1621 GCCCTTGAAG AGCTGTACGA AGACCGCGCG GCAGGAGCTT ACGACGGACC CGTTGGCAGG
 1681 AAGCACTTCC GGAAGCAACA GGCAGCGCTG ACGTCCGGC AGCAAGGGGC GGAAGAGCGG
 1741 CTTGCCGAAC TTGAAGCCGC CGAAGCCCCG AAGTTGCCCC TTGACCAATG GTTCCCCGAA
 1801 GACGCCGACG CTGACCCGAC CGGCCCTAAG TCGTGGTGGG GGCGCGCGTC AGTAGACGAC
 1861 AAGCGCGTGT TCGTCGGGCT CTTCGTAGAC AAGATCGTTG TCACGAAGTC GACTACGGGC
 1921 AGGGGGCAGG GAACGCCCAT CGAGAAGCGC GCTTCGATCA CGTGGGCGAA GCCGCCGACC
 1981 GACGACGACG AAGACGACGC CCAGGACGGC ACGGAAGACG TAGCGGCGTA G

FIGURE 8

Nucleotide sequence of pBPS EW051 T-DNA Region

Sequence Molecule Features:

Start	End	Name
3	217	Left T-DNA Border
225	259	attB
485	273	g7pA (terminator)
2288	519	<i>codA-aacCI</i> translational fusion gene
2898	2303	Nopaline Synthase Promoter
2925	3236	Octopine Synthase Promoter
3260	4267	tTA gene
4292	4558	Nopaline Synthase Terminator
4597	4933	Top10 promoter
4977	7007	ϕ C31 <i>int</i> ^{INT} gene
7027	7221	Octopine Synthase Terminator
7253	8392	Super Promoter
8413	9405	<i>erGFP7</i> ^{INT} gene
9411	9677	Nopaline Synthase Terminator
9690	9728	attP
9735	9880	Right T-DNA Border

Sequence:

1 TGGTGATTTT GTGCCGAGCT GCCGGTCGGG GAGCTGTTGG CTGGCTGGTG GCAGGATATA
 61 TTGTGGTGTA AACAAATTGA CGCTTAGACA ACTTAATAAC ACATTGCGGA CGTCTTTAAT
 121 GTACTGAATT AACATCCGTT TGATACTTGT CTAATAATTGG CTGATTTCGA GTGCATCTAT
 181 GCATAAAAC AATCTAATGA CAATTATTAC CAAGCAGGAT CACCGGTGCC AGGGCGTGCC
 241 CTTGGGCTCC CCGGGCGCGG CCCGGGCAAT TCCCATCTTG AAAGAAATAT AGTTTAAATA
 301 TTTATTGATA AAATAAGTCA GGTATTATAG TCCAAGCAAA AACATAATTT ATTGATGCAA
 361 AGTTTAAATT CAGAAATATT TCAATAACTG ATTATATCAG CTGGTACATT GCCGTAGATG
 421 AAAGACTGAG TGCGATATTA TGTGTAATAC ATAAATTGAT GATATAGCTA GCTTAGCTCA
 481 TCGGGGGATC CTTAATCGAC TCTAGCTAGA ACGAATTGTT AGGTGGCGGT ACTTGGGTCG
 541 ATATCAAAGT GCATCACTTC TTCCCGTATG CCCAACTTTG TATAGAGAGC CACTGCGGGA
 601 TCGTCACCGT AATCTGCTTG CACGTAGATC ACATAAGCAC CAAGCGCGTT GGCCTCATGC
 661 TTGAGGAGAT TGATGAGCGC GGTGGCAATG CCCTGCCTCC GGTGCTCGCC GGAGACTGCG
 721 AGATCATAGA TATAGATCTC ACTACGCGGC TGCTCAAACC TGGGCAGAAC GTAAGCCGCG
 781 AGAGCGCCAA CAACCGCTTC TTGGTCAAG GCAGCAAGCG CGATGAATGT CTTACTACGG
 841 AGCAAGTTCC CGAGGTAATC GGAGTCCGGC TGATGTTGGG AGTAGGTGGC TACGTCTCCG
 901 AACTCACGAC CGAAAAGATC AAGAGCAGCC CGCATGGATT TGACTTGGTC AGGGCCGAGC
 961 CTACATGTGC GAATGATGCC CATCCTCGAG AAACGTTTGT AATCGATGGC TTCTGGCTGC
 1021 TCCAGATATA CGGTGGTTTG TGCCGTTTGT GTGCTGGCAA TCACCTTGCC GCCACGTACC
 1081 GAATAACGTA CCGGAACCTG ACGGCGCAGC GCATCAAACC CATTTTCAGC CGGCAGGATA
 1141 ATCAGGTTGG CGCTGTTTCC GGCGGCAATG CCGTAATCCT GCAAATTCAA CGTCCTTGCG
 1201 CTGTGGTGGG TGATTAAATT CAGGCCATCG TTAATCTGCC CGTAGCCCAT CAACTGGCAA
 1261 ACATGCAGCC CCATATGCAG CACTTGCAGC ATATTCGCCG TTCCAGCGG ATACCACGGA
 1321 TCGAAGACAT CATCGTGACC AAAGCAGACG TTAATGCCGG ACTCCAGCAT CTCTTTAACG
 1381 CGCGTGATGC CGCGACGTTT TGGATACGTA TCGAAACGTC CTTGCAGATG AATATTGACC
 1441 AGCGGGTTGG CGACAAAGTT AATACCGGAC ATTTTCAGCA AGCGGAACAG GCGTGAGGTA
 1501 TACGCCCCGT TATAGGAGTG CATTGCCGTG GTGTGGCTGG CGGTGACTCG CGCGCCCATG
 1561 CCTTCATGGT GCGCCAGGGC AGCAACGGTT TCGACAAAGC GCGACTGCTC GTCATCGATC
 1621 TCATCACAGT GAACGTCGAT GAGACGGTCG TATTTTTCG CAGGGGCGAA GGTTTATATG
 1681 AGCGACTCCA CGCGCTATTC ACGGGTAAAT TCAAAATGCG GAATCGCCCC CACTACATCT
 1741 GCCCCTAAGC GTAACGCCTC TTCCAGCAAC GCTTCACCGT TGGGATACGA CAAAATCCCT
 1801 TCCTGAGGGA AGGCGACGAT TTGCAGATCA ATCCACGGCG CGACTTCCTG CTTCACTTCC
 1861 AGCATTGCTT TCAGCGCAGT TAGCGTTGCA TCCGAAACAT CGACATGGGT ACGCACATGC
 1921 TGAATGCCGT TGGCAATCTG CCATTTTCAGC GTTTGCCATG CGCGTTGTTT CACATCGTCA

FIGURE 8 CONTINUED

1981 TGGGTTAATA ACGCTTTGCG CTCGGCCCCAG CGTTCAATGC CTTCAAACAG CGTGCCGGAC
 2041 TGATTCCAGT TCGGTTGTCC GGC GGTTTGC GTGGTGTCCA GGTGAATATG TGGCTCCACA
 2101 AACGGCGGTA TAACTAAACC TTGTTCCGCA TCCAGGCTGT TTTCAGTTAT GGGCATCACG
 2161 CCGGATTGCG CATCAATGGC GCTGATTTT CCGTCCTGCA GATGAATCTG CCACAGCCCC
 2221 TCTTCGCCTG GTAACCGGGC GTTAATAATT GTTTGTAAAG CGTTATTCTGA CACTGTTAGC
 2281 CTCCCCATGG AGATCTGGAT TGAGAGTGAA TATGAGACTC TAATTGGATA CCGAGGGGAA
 2341 TTTATGGAAG TCAGTGAGC ATTTTGTACA AGAAATATT GCTAGCTGAT AGTGACCTTA
 2401 GGCGACTTTT GAACGCGCAA TAATGGTTTC TGACGTATGT GCTTAGCTCA TTAAACTCCA
 2461 GAAACCCGCG GCTGAGTGGC TCCTTCAACG TTGCGGTTCT GTCAGTTCCA AACGTAAAC
 2521 GGCTTGTC GCGTCATCGG CCGGGGTCAT AACGTGACTC CCTTAATTCT CCGCTCATGA
 2581 TCTTGATCCC CTGCGCCATC AGATCCTTGG CGGCAAGAAA GCCATCCAGT TTACTTTGCA
 2641 GGGCTTCCCA ACCTTACCAG AGGGCGCCCC AGCTGGCAAT TCCGGTTGCG TTGCTGTCCA
 2701 TAAACCGCC CAGTTAGCT ATCGCCATGT AAGCCCACTG CAAGCTACCT GCTTTCTCTT
 2761 TGCGTTGCG TTTTCCCTTG TCCAGTAAGC CCAGTAGCTG ACATTCATCC GGGGTACGCA
 2821 CCGTTTCTGC GGAAGTGGCTT TCTACGTGTT CCGCTTCTT TAGCAGCCCT TCGCGCCCTGA
 2881 GTGCTTGGCG CAGCGTGAAG CTTGGCGCGC CAAGCTTGCA TGCCCGCTCT TAGCCGTACA
 2941 ATATTACTCA CCGGTGCGAT GCGCCCATC GTAGGTGAAG GTGGAAATTA ATGATCCATC
 3001 TTGAGACCAC AGGCCACAA CAGTACCAG TTCTCTCAAG GGTCCACCAA AAACGTAAGC
 3061 GCTTACGTAC ATGGTCGATA AGAAAAGGCA ATTTGTAGAT GTTAACATCC AACGTCGCTT
 3121 TCAGGGATCC TTTTACCGA CAATCATCC ACATTGATGG TAGGCAGAAA GTTAAAGGAT
 3181 TATCGCAAGT CAATACTTGC CCATTCTTGT ATCTATTAA AGGTGTGGCC TCAAGGAGAT
 3241 CCGCGGGCGG GCAATTCATA TGTCTAGATT AGATAAAAGT AAAAGTGATTA ACAGCGCATT
 3301 AGAGCTGCTT AATGAGGTCG GAATCGAAGG TTTAACAACC CGTAAACTCG CCCAGAAGCT
 3361 AGGTGTAGAG CAGCCTACAT TGTATTGGCA TGTAATAAAT AAGCGGGCTT TGCTCGACGC
 3421 CTTAGCCATT GAGATGTTAG ATAGGCACCA TACTCACTTT TGCCCTTAG AAGGGGAAAG
 3481 CTGGCAAGAT TTTTACGTA ATAACGCTAA AAGTTTATA TGTTGCTTAC TAAGTCATCG
 3541 CGATGGAGCA AAAGTACATT TAGGTACACG GCCTACAGAA AAACAGTATG AAATCTCGA
 3601 AAATCAATTA GCCTTTTAT GCCAACAAGG TTTTCTACTA GAGAATGCAT TATATGCACT
 3661 CAGCGCTGTG GGGCATTTTA CTTTAGGTTG CGTATTGGAA GATCAAGAGC ATCAAGTCGC
 3721 TAAAGAAGAA AGGGAAACAC CTACTACTGA TAGTATGCCG CCATTATTAC GACAAGCTAT
 3781 CGAATTATT GATCACCAAG GTGCAGAGCC AGCCTTCTTA TTCGGCCTTG AATTGATCAT
 3841 ATGCGGATTA GAAAAACAAC TTAAATGTGA AAGTGGGTCC GCGTACAGCC GCGCGCGTAC
 3901 GAAAAACAAT TACGGGTCTA CCAATCGAGGG CCTGCTCGAT CTCCCGGACG ACGACGCCCC
 3961 CGAAGAGGCG GGGCTGGCGG CTCGCGCCT GTCCTTTCTC CCCGCGGGAC ACACGCGCAG
 4021 AATGTCGACG GCGCGCGCA CCGATGTCAG CCTGGGGGAC GAGCTCCACT TAGACGGCGA
 4081 GGACGTGGCG ATGGCGCATG CCGACGCGCT AGACGATTTC GATCTGGACA TGTGGGGGA
 4141 CCGGGATTCC CCGGTCCGG GATTTACCC CCACGACTCC GCGCTCTGGA
 4201 TATGGCCGAC TTCGAGTTG AGCAGATGTT TACCGATGCC CTGGAATTG ACGAGTACGG
 4261 TGGGTAGGGG GCGCGAGGAT CTCGAGCAGC TCGAATTTC CCGATCGTTC AAACATTGG
 4321 CAATAAAGTT TCTTAAGATT GAATCCTGTT GCCGGTCTTG CGATGATTAT CATATAATTT
 4381 CTGTTGAATT ACGTTAAGCA TGTAAATAATT AACATGTAAT GCATGACGTT ATTTATGAGA
 4441 TGGGTTTTTA TGATTAGAGT CCCGCAATTA TACATTTAAT ACGCGATAGA AAACAAAATA
 4501 TAGCGCGCAA ACTAGGATAA ATTATCGCGC GCGGTGTCAT CTATGTTACT AGATCGGGAA
 4561 TTCCTTAATT AAGAATTCGA GCTCGGTACC GAGCTCGACT TTCCTTTTC TCTATCACTG
 4621 ATAGGGAGTG GTAAACTCGA CTTTCATTT CTCTATCACT GATAGGGAGT GGTAACCTCG
 4681 ACTTTCATT TTCTCTATCA CTGATAGGGA GTGGTAAACT CGACTTTCAC TTTTCTCTAT
 4741 CACGGATAGG GAGTGGTAAA CTCGACTTTC ACTTTTCTCT ATCACTGATA GGGAGTGGTA
 4801 AACTCGACTT TCATTTTCT CTATCACTGA TAGGGAGTGG TAAACTCGAC TTTCACTTTT
 4861 CTCTACTACT GATAGGGAGT GGTAACCTCG AGATAGAGTG ATCTAGTCTT CGCAAGACCC
 4921 TTTACGTATA TAAGGCCTTT CTAGACATTT GCTCGAGCCC GGGGATCCAT ATGGCCATGG
 4981 CACAAGGGGT TGTGACCGGG GTGGATACGT AAGTTTCTGC TTCTACCTTT GATATATATA
 5041 TAATAATTAT CATTAATTAG TAGTAATATA ATATTTCAAA TATTTTTTTC AAAATAAAAG
 5101 AATGTAGTAT ATAGCAATTG CTTTTCTGTA GTTTATAAGT GTGTATATTT TAATTTATAA
 5161 CTTTTCTAAT ATATGACCAA AATTTGTTGA TGTGCAGGTA CGCGGGTGCT TACGACCGTC

FIGURE 8 CONTINUED

5221 AGTCGCGCGA GCGCGAGAAT TCGAGCGCAG CAAGCCCAGC GACACAGCGT AGCGCCAACG
 5281 AAGACAAGGC GGCCGACCTT CAGCGCGAAG TCGAGCGCGA CGGGGGCCGG TTCAGGTTTCG
 5341 TCGGGCATTT CAGCGAAGCG CCGGGCACGT CGGCGTTCGG GACGGCGGAG CGCCCGGAGT
 5401 TCGAACGCAT CCTGAACGAA TGCCGCGCCG GCGGGCTCAA CATGATCATT GTCTATGACG
 5461 TGTCGCGCTT CTCGCGCCTG AAGGTCATGG ACGCGATTCC GATTGTCTCG GAATTGCTCG
 5521 CCCTGGGCGT GACGATTGTT TCCACTCAGG AAGGCGTCTT CCGGCAGGGA AACGTCATGG
 5581 ACCTGATTCA CCTGATTATG CGGCTCGACG CGTCGCACAA AGAATCTTCG CTGAAGTCGG
 5641 CGAAGATTCT CGACACGAAG AACCTTCAGC GCGAATTGGG CGGGTACGTC GGCGGGAAGG
 5701 CGCCTTACGG CTTTCGAGCTT GTTTCGGAGA CGAAGGAGAT CACGCGCAAC GGCCGAATGG
 5761 TCAATGTCTG CATCAACAAG CTTGCGCACT CGACCACTCC CTTACCGGA CCCTTCGAGT
 5821 TCGAGCCCCG CGTAATCCGG TGGTGGTGGC GTGAGATCAA GACGCACAAA CACCTTCCCT
 5881 TCAAGCCGGG CAGTCAAGCC GCCATTACCC CGGGCAGCAT CACGGGGCTT TGTAAGCGCA
 5941 TGGACGCTGA CGCCGTGCCG ATCCGCGGCG AGACGATTGG GAAGAAGACC GCTTCAAGCG
 6001 CCTGGGACCC GGCAACCGTT ATGCGAATCC TTCGGGACCC GCGTATTGCG GGCTTCGCGG
 6061 CTGAGGTGAT CTACAAGAAG AAGCCGGACG GCACGCCGAC CACGAAGATT GAGGGTTACC
 6121 GCATTACGCG CGACCCGATC ACGCTCCGGC CGGTTCGAGCT TGATTGCGGA CCGATCATCG
 6181 AGCCCGCTGA GTGGTATGAG CTTACGGCGT GGTTCGACGG CAGGGGGCGC GGCAAGGGGC
 6241 TTTCCCGGGG GCAAGCCATT CTGTCCGCCA TGGACAAGCT GTACTGCGAG TGTGGCGCCG
 6301 TCATGACTTC GAAGCGCGGG GAAGAATCGA TCAAGGACTC TTACCGCTGC CGTCGCCGGA
 6361 AGGTGGTCGA CCCGTCCGCA CCTGGGCAGC ACGAAGGCAC GTGCAACGTC AGCATGGCGG
 6421 CACTCGACAA GTTCGTTCG GAACGCATCT TCAACAAGAT CAGGCACGCC GAAGGCGACG
 6481 AAGAGACGTT GCGCTTCTG TGGGAAGCCG CCCGACGCTT CGGCAAGCTC ACTGAGGCGC
 6541 CTGAGAAGAG CGGCGAACGG GCGAACCTTG TTGCGGAGCG CGCCGACGCC CTGAACGCCC
 6601 TTGAAGAGCT GTACGAAGAC CGCGCGGCAG GCGCGTACGA CGGACCCGTT GGCAGGAAGC
 6661 ACTTCCGGAA GCAACAGGCA GCGCTGACGC TCCGGCAGCA AGGGGCGGAA GAGCGGCTTG
 6721 CCGAACTTGA AGCCGCCGAA GCCCCGAAGC TTCCCCTTGA CCAATGGTTC CCCGAAGACG
 6781 CCGACGCTGA CCCGACCGGC CCTAAGTCGT GGTGGGGGCG CGCGTCAGTA GACGACAAGC
 6841 GCGTGTTCGT CGGGCTCTTC GTAGACAAGA TCGTTGTCAC GAAGTCGACT ACGGGCAGGG
 6901 GGCAGGGAAC GCCCATCGAG AAGCGCGCTT CGATCACGTG GCGGAAGCCG CCGACCGACG
 6961 ACGACGAAGA CGACGCCAG GACGGCACGG AAGACGTAGC GCGTAGCTG CAGCTCGACG
 7021 CATGCCCTGC TTAAATGAGA TATGCGAGAC GCCTATGATC GCATGATATT TGCTTTCAAT
 7081 TCTGTTGTGC ACGTTGTAAA AAACCTGAGC ATGTGTAGCT CAGATCCTTA CCGCCGGTTT
 7141 CGGTTTATTC TAATGAATAT ATCACCCGTT ACTATCGTAT TTTTATGAAT AATATTCTCC
 7201 GTTCAATTTA CTGATTGTCC AAGCTTCCTG CAGGAAGCTT TGGGCGGATC CTCTAGATTC
 7261 GACGGTATCG ATAAGCTCGC GGATCCCTGA AAGCGACGTT GGATGTTAAC ATCTACAAAT
 7321 TGCCTTTTCT TATCGACCAT GTACGTAAGC GCTTACGTTT TTGGTGGACC CTTGAGGAAA
 7381 CTGGTAGCTG TTGTGGGCCT GTGGTCTCAA GATGGATCAT TAATTTCCAC CTTACCTAC
 7441 GATGGGGGGC ATCGCACCGG TGAGTAATAT TGTACGGCTA AGAGCGAATT TGGCCTGTAG
 7501 GATCCCTGAA AGCGACGTTG GATGTAAACA TCTACAAATT GCCTTTTCTT ATCGACCATG
 7561 TACGTAAGCG CTTACGTTTT TGGTGGACCC TTGAGGAAAC TGGTAGCTGT TGTGGGCCTG
 7621 TGGTCTCAAG ATGGATCATT AATTTCCACC TTCACCTACG ATGGGGGGCA TCGACCCGGT
 7681 GAGTAATATT GTACGGCTAA GAGCGAATTT GGCCTGTAGG ATCCCTGAAA GCGACGTTGG
 7741 ATGTTAACAT CTACAAATTG CCTTTTCTTA TCGACCATGT ACGTAAGCGC TTACGTTTTT
 7801 GGTGGACCCT TGAGGAAACT GGTAGCTGTT GTGGGCCTGT GGTCTCAAGA TGGATCATTA
 7861 ATTTCCACCT TCACCTACGA TGGGGGGCAT CGCACCGGTG AGTAATATTG TACGGCTAAG
 7921 AGCGAATTTG GCCTGTAGGA TCCGCGAGCT GGTCAATCCC ATTGCTTTTG AAGCAGCTCA
 7981 ACATTGATCT CTTTCTCGAT CGAGGGAGAT TTTTCAAATC AGTGCGCAAG ACGTGACGTA
 8041 AGTATCCGAG TCAGTTTTTA TTTTCTACT AATTGGTTCG TTTATTTTCG CGTGTAGGAC
 8101 ATGGCAACCG GGCCTGAATT TCGCGGTAT TCTGTTTCTA TTCCAACCTT TTCTTGATCC
 8161 GCAGCCATTA ACGACTTTTG AATAGATACG CTGACACGCC AAGCCTCGCT AGTCAAAAAGT
 8221 GTACCAACA ACGCTTTACA GCAAGAACGG AATGCGCGTG ACGCTCGCGG TGACGCCATT
 8281 TCGCCTTTTC AGAAATGGAT AAATAGCCTT GCTTCCTATT ATATCTTCCC AAATTACCAA
 8341 TACATTACAC TAGCATCTGA ATTCATAAC CAATCTCGAT ACACCAAATC GAAGATCCAA
 8401 GGAGATATAA CAATGAAGAC TAATCTTTTT CTCTTCTCA TCTTTTCACT TCTCCTATCA

FIGURE 8 CONTINUED

8461 TTATCCTCGG CCGAATTGTA CGTAAGTTTC TGCTTCTACC TTTGATATAT ATATAATAAT
 8521 TATCATTAAAT TAGTAGTAAT ATAATATTTT AAATATTTTT TTCAAATAA AAGAATGTAG
 8581 TATATAGCAA TTGCTTTTCT GTAGTTTATA AGTGTGTATA TTTTAATTTA TAACTTTTCT
 8641 AATATATGAC CAAAATTTGT TGATGTGCAG GTACAATTCA GTAAAGGAGA AGAACTTTTC
 8701 ACTGGAGTTG TCCCAATTCT TGTGAATTA GATGGTGATG TTAATGGGCA CAAATTTTCT
 8761 GTCAGTGGAG AGGGTGAAGG TGATGCAACA TACGGAAAAC TTACCCTTAA ATTTATTTGC
 8821 ACTACTGGAA AACTACCTGT TCCATGGCCA ACACTTGTC CTACTTTCAC TTATGGTGT
 8881 CAATGCTTTT CAAGATACCC AGATCATATG AAGCGGCACG ACTTCTTCAA GAGCGCCATG
 8941 CCTGAGGGAT ACGTGCAGGA GAGGACCATC TCTTTCAAGG ACGACGGGAA CTACAAGACA
 9001 CGTGCTGAAG TCAAGTTTGA GGGAGACACC CTCGTCAACA GGATCGAGCT TAAGGGAATC
 9061 GATTCAAGG AGGACGGAAA CATCCTCGGC CACAAGTTGG AATACAATA CAACTCCAC
 9121 AACGTATACA TCACGGCAGA CAAACAAAAG AATGGAATCA AAGCTAACTT CAAAATTAGA
 9181 CACAACATTG AAGATGGAAG CGTTCAACTA GCAGACCATT ATCAACAAA TACTCCAATT
 9241 GCGATGGCC CTGTCCTTTT ACCAGACAAC CATTACCTGT CCACACAATC TGCCCTTTCG
 9301 AAAGATCCCA ACGAAAAGAG AGACCACATG GTCCTTCTTG AGTTTGTAAC AGCTGCTGGG
 9361 ATTACACATG GCATGGATGA ACTATACAAA CATGATGAGC TTAAAGAGCT CGAATTTCCC
 9421 CGATCGTTCA AACATTTGGC AATAAAGTTT CTTAAGATTG AATCCTGTTG CCGGTCTTGC
 9481 GATGATTATC ATATAATTC TGTTGAATTA CGTTAAGCAT GTAATAATTA ACATGTAATG
 9541 CATGACGTTA TTTATGAGAT GGGTTTTTAT GATTAGAGTC CCGCAATTAT ACATTTAATA
 9601 CGCGATAGAA AACAAAATAT AGCGCGCAAA CTAGGATAAA TTATCGCGCG CGGTGTCATC
 9661 TATGTTACTA GATCGGGAAT TCGCGATCGC CCCAACTGGG GTAACCTTTG AGTTCTCTCA
 9721 GTTGGGGGAG ATCTGATTGT CGTTTCCCGC CTTCAGTTTA AACTATCAGT GTTTGACAGG
 9781 ATATATTGGC GGGTAAACCT AAGAGAAAAG AGCGTTTATT AGAATAATCG GATATTTAAA
 9841 AGGGCGTGAA AAGGTTTATC CGTTCGTCCA TTTGTATGTC

FIGURE 9

Nucleotide sequence of *Arabidopsis thaliana* *GA4H* promoter region

1 TGTAATGAT AGGGATTGAA ACATCATCCT ATCGTTGACC AAAAATTTCA CTGCGTGCTA
 61 TATAAAATAC TATATATGTT ACCCTTTAAC TGATGAAAAA GTAAAGAGAC AAGGCAGCAC
 121 CGTTTATCAT CAGACCAGTT TCGAGAGTGT TCCTGCATCG TTGGGCTCCC TCCTCAATTT
 181 TGTCTACGTG ATTATATATC ATATCGTCTA CAAACAAAAT AAATACAATT CTATCATATG
 241 AATATGTGAT CATCGATGAT CGATCAATAT ATGTTTTTCGA GGTGACGTAT ATAGTATATT
 301 TCCGTAGAGA CGGCGAAGAA CATGATATCT CTGCATGCCT CCAATCAAAT CTTTACACTT
 361 CATCCTTCTT CGTACTTGT TCAAGTTGTC CTTTCTAATC CCGACAACCC TTAATTTGTA
 421 TTTCTATATT AGATCGAAAT ATCTCATTTG TGATAAATAA AATAAAAAAA ATCAAAGAAA
 481 GCTATAGAGA AGCTGCGTGC ATGCATGGGT TGGCGATGTT TGGCTTGTTA TGTTTTGGCTT
 541 GTTATGTGGC ATTATCTGTA TGTATATTAC CCTAAATCAC ATCTACGACA TTTCCCTCGA
 601 TCTTCAAAT ATGCCAGCAA TCTTCATGTT TCCTCATATC TCTTAACATT GGAAAAATGTC
 661 TTTTGACCTC TTTTGATGTA TTTTAAATTA CTTGAGCTC ATCTATATTA CAAATCATTC
 721 ATGGTGAATT ATTGTCCAGC CAATAGAATA GAAATCTGAA TATAATGTGT ACCACATCTT
 781 TTATGTAATT TATACGATAT TCTTTTTCTT GAGAATGATC AAATAACAAC ATGCATGAAT
 841 TGCTGCCAGA AAACGTCAGA TTGATCAGTT ATCACTACAA TTATCAATTA ACTAGTAAAT
 901 AGTATCAAAA TGTACGTAGT GCCCATCTAT AGCTAGCTAA GGAGGACTCC GGATGTAGAG
 961 AAAAGCTAAA ATGTGACTTG CTAGAGTTGT ATTATATTGA ATTTTCTAAA CTAATAGTAT
 1021 CTTTTTTACA GATAATAATT TCCGAAAAAC CTATTAGATG TATAGATATA ACAATAAGCA
 1081 TCGATACCAA CCTTTTACTT CCAAAAAAAA ATAAAAAAA AATGCCAAGA TGAGATAATT
 1141 TTGTCAATTT CAATTAGTGG GAAAATAACA ATTGTCGTGT TATTTTTGAA CCAACGCATC
 1201 TCAGTGAATG ATTTCCAGT TCTTAAGATT TTAGGACATA CTTTCCAGT AACATCTAAT
 1261 CCGTTTGGGC ATAAACAAGA CAATTTGTAG TTATGTACAT TTCTTAGTGA TGTGTGTTGA
 1321 AAAGATATGA ATCAATGAGG TCCGACATAT TTTGTCAATA CGTTAGTGGT GTTTCAAAAT
 1381 AAATTTTTAG TATATATATT AAAATAAGAC CAAAGGATAG GCTTAGTGG TGTTTCAGGT
 1441 ATAGTTTTAA TAATCAATTC AAAATAAGTC GAAAGGATAT GTAAGATAGG CGTTATTTCA
 1501 ACGTGGATCA TTATCAACCA TGTCAAAAAC GCATTTCAAC TCCTAGATGT GTTGTTAGTT
 1561 ATATATGTTT CAAATGGAAT CGACCCAACA GAAAAAGAGA AAAAAACGTA AAAGGTTATG
 1621 CGATTCCAGG GACGTCTCAT ATATATATAT ATTCCGATGA AATATAAATA TAATTATCGT
 1681 GGTCTGTGAC AATAAATATG GAAATAGATG TGGAAATCAT GATCATGTGA AGAAGAAGAA
 1741 GAACACGTGC AGATGAACTG CAAATGATAA TAATGTGCAT GTCCATGAGT TATGTACTTA
 1801 TGTGTATTAT CTACGTGTTT TCCATACATA CATATATAAA TCTTATATTA CTTTATGGTT
 1861 TTGTCGTAAA AGTTACGTAG CATCAATAAT TGTGATTTCG TGCCATAAAC AGACAACTAC
 1921 TTGTAACGGT ATAAGGCTTG GCTCTCATGA TAAAATGATA ACCCTTTTTT TCGTCGGAGA
 1981 CAGACAAACG CATAAATCAC TAATTCTAAA CCGAGATGAT TGTCGATTG TTTGCCATAT
 2041 GCATAACTAG AATCTTCAGT TAATATTAAT TTTTGGTGT TTCGATCGAA TAAAAAAA
 2101 TAAACATTGC AATATTTTGA AATTTGTCGT CTTTCTTTT ATAACACTAG CAAGTGAGAG
 2161 GCTGAGAGCC AAGTGAACG TTAAGAGACA ACATTAGATA TATATTATAT ATTGCTAAAT
 2221 CTGTATTATT TCTTTTAAAC ATACGCAACT TTTGATTGGA AATCGTAAGT CGAAGGAAGG
 2281 GCCTCGATTT ATGACGTACG CTTCGTGCCA AACAATTCCT CTTTAGTTGA GGCCGGGGAA
 2341 GACGAGTTTG TTGTTAGTGA GCGATGCCAT GGCATCAATG AACTCCCAA GGCCATATGT
 2401 TCTGTTAAAG GCTATTTTAG TTTTAAATTT TGTTCTGATT AACTCAACCA CATGTTAAAT
 2461 CAGATATCAT GTTTAACGAT ATTAGTTTTT AAACAAAATG ATTATCATAA AACGAAATTT
 2521 ATGATGAAAC ATATATAATC TTTATCTTGT TTAAGTATGT AATTCTTGTA TGTTTGATA
 2581 CGCCTTGCAA ATCAAAAAAC TAGTTGCTGT TTTTGGCATT GTGTTTACGA AATATTTATT
 2641 AATATTTTAA ATTAATTAAT TAAATGTTCT TATTTCTCAA CAGGAAACAA TATGTATTTT
 2701 CTTTCTTTAT AAAATTACAA TGAATTATTT GTTTTAAAGCT GTCTATTTCC AAGAAACAAA
 2761 ACACAAAAAT GATAAATTTA TAATAGTCAC ATAACCTGTC TTACAAAAAA AAAAAAGAAA
 2821 GCGAAAAGAA ATGTGACAAC AGAAAATGGT TTTGATAACC AATAAGAATC GACAAAAAAA
 2881 AAACCTTACT CACATATACT CTCTCTTCA CTCTTCAGTC TTCACTATTC AGTCTCGAGT
 2941 ATTTCAACGA TCTATAAATA CACTCCTCTT CTCCACCAA AGTATCATAT CATACCAAAA
 3001 ACATAAAGCC AAAATATAAA CACATAAGCC TTTTA